

REMARKS

In this Amendment, Applicants have cancelled Claims 4, 7, 9, 12 and 14 – 16 without prejudice or disclaimer; amended Claims 1 – 3, 8, 10, 11, and 13; and added new Claims 17 – 18. Claims 1 – 3, 8, 10, 11, and 13 have been amended and Claims 17 – 18 have been added to specify different embodiments of the present invention and overcome the rejection. It is respectfully submitted that no new matter has been introduced by the amended and added claims. All claims are now present for examination and favorable reconsideration is respectfully requested in view of the preceding amendments and the following comments.

REJECTIONS UNDER 35 U.S.C. § 102:

Claims 1 – 4 and 8 – 16 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Imanishi et al. (US Pat. No. 6,054,209), hereinafter Imanishi. Claims 1 – 3, 7 – 9 and 13 have been rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Kumaki et al. (US Pat. No. 6,617,381), hereinafter Kumaki.

Applicants traverse the rejection and respectfully submit that the presently claimed invention is not anticipated by the cited references. Claims 4, 7, 9, 12 and 14 – 16 have been cancelled. Thus the rejection to these claims is moot. In addition, Claim 1 and 13 have been amended to clearly distinguish the present invention from the cited references. Referring to Imanishi (US 6,054,209), the Examiner indicates that “The film consists essentially of a polyamide matrix (col.11, 1.18-30 and 53-56) and styrenic, vinyl, olefinic, or acrylic polymers (col.11, 1.33-40 and 53-56) forming a dispersed phase”. However, the text cited further by the Examiner reads as follows:

1. **Column 11, lines 1.18-30:** “The thermoplastic resin composing the continuous phase can preferably be selected from polymers excellent in film forming properties, and include, for instance, an olefinic polymer (specifically polyethylene, polypropylene, an ethylene-propylene copolymer, etc.), a styrenic polymer (particularly, polystyrene, a

rubber-modified impact resistant polystyrene, etc.), a polycarbonate (particularly, bisphenol A-type polycarbonate and the like), a polyester (particularly, polyethylene terephthalate; polybutylene terephthalate, poly-1,4-dimethylol-cyclohexane terephthalate, etc.), and polyamide (specifically, nylon 6, nylon 66, nylon 610, nylon 612, nylon 11, nylon 12 or others)”.

2. **Column 11, lines 53-56:** “The thermoplastic resin for the dispersed phase which can preferably used in combination with (f) a **polyamide** forming the continuous phase may be at least one thermoplastic resin selected from (a) an **olefinic** polymer, (c) a **styrenic** polymer, (d) a **polycarbonate**, and (e) a **polyester**”.

Thus, in said cited text, there is no reference that **vinyl** or **acrylic** polymers are used as a dispersed phase which is preferably should be used in combination with the polyamide forming continuous phase.

The list of polymers, which Imanishi (US 6,054,209) relates to vinyl **polymer**, is presented in col.5, 1.58 – col.6, 1.15. Polyvinylpyrrolidone, polyvinyl alcohol indicated in claim 4 are, according to Imanishi, vinyl polymer. Imanishi does not mention polyalkyloxazoline, or polyalkylene glycol.

Therefore, Applicants do not agree with the Examiner’s allegation that Imanishi (US 6,054,209) describes the film consisting essentially of a polyamide matrix, **vinyl or acrylic** polymers forming a dispersed phase.

To prove that **films** according to Imanishi and the present application **are not identical**, Applicants have tested the film tear strength (the right angle method) in accordance with teaching of Imanishi. A signed Declaration under 37 CFR 1.132 will be submitted shortly in a supplemental response.

The test results of the film tear strength according to the present application (US No 10/671,489) are summarized in the Table below.

Table 1

Example No (according to the present Application)	Tear direction	1	3	5	11
Right angle tear strength, kg/cm	MD	198.3	207.4	169.4	241.6
	TD	264.4	135.9	164.3	166.3

As can be seen from the table, the films, in accordance with the examples of the invention Nos. 1, 3, and 5, have values of “right angle tear strength” in any direction which significantly exceed the upper limit of this value, 120 kg/cm (claim 12) claimed in Imanishi and are comparable with the values characterizing the films consisting of pure polyamide (example 11 of the present application).

Applicants are of opinion that this fact is connected both with the difference in the polymeric composition of films produced according to Imanishi and according to the present invention and with difference in the manufacturing technology thereof:

1. The films composed from the mixture of polyamide and hydrophilic compounds in accordance with the present invention are not illustrated in the embodiment examples of Imanishi.

2. The films according to Imanishi were produced by either using a T-die without a further orientation treatment or by inflation-molding (column 3, lines 40-46 and claim 14 (column 36, lines 13-16)), although a possibility of the film stretching (that can be understood as “orientation”) is mentioned in the description but not in the Examples.

3. The films according to the present invention are produced by using **orientational drawing followed by** relaxation annealing (called also “thermofixation” or “thermal fixation”) (see present application US No 10/671,489, example 1, page 4, paragraph [0047] and examples 2-11), which, as known for a person skilled in the art, significantly affects film mechanical properties and **structure (degree of crystallinity, the size of crystallites of polyamide matrix, etc.)** that is confirmed by the difference in

tear strength values. Therefore, the lack of such operation as thermal fixation in Imanishi should result in nonconformity of other properties, such as, for example, permeability with respect to water vapor or phenol. This is confirmed by the vapor permeability of the films produced according to examples 1, 3, 5 and comparative example 11 (the film produced from PA 6.66 only) of the present invention, **but without the use of annealing** (thermofixation), shown in Table 2.

Table 2. Vapor permeability g/m²/day

Example № (the film composition according to the present Application)	1	3	5	11
With relaxation annealing (the process according to the present Application)	453	509	480	216
Without relaxation annealing	280	297	312	198

The use of such technology of manufacturing thereof is motivated by the objects of the invention - producing films which have good mechanical properties (a tensile strength) and are suitable for use as a sausage casing. The method used in this case is typical for producing an oriented tubular polyamide casing and includes extrusion-molding of a tubular parison, named a primary tube followed by biaxial orientation by air-blowing and by simultaneous longitudinal stretching. In this case, the coefficient of longitudinal stretch is not less than 2.6 in one of the directions. This orientation is carried out at temperature 60°C, i.e., above the glass transition temperature of polyamide 6.66 and significantly below the melting point thereof 190°C, and, therefore, is effective.

Furthermore, the film orientation is fixed by relaxation annealing (a thermal fixation), otherwise the film would not have satisfactory dimensional stability and could not be used as a sausage casing.

It should be noted that Imanishi fails to mention terms "thermofixation" or "annealing". Thus, it has been demonstrated that films according to the present application differ from the cited art by the most important feature, namely, by tear strength. On the other hand it was shown that the films of composition according to the present Application but produced without thermofixation step, which is not intended to apply by Imanishi document, do not meet such an object of the invention as high permeability with respect to water vapor.

The differences between the present invention and Kumaki reference (USPN 6,617,381) have been explained in detail in previous response. In addition, due to additional limitations introduced by the current amendment, there are significant differences between Kumaki and the present invention.

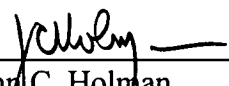
Therefore, the pending claims are not anticipated by Imanshi or Kumaki and the rejection under 35 U.S.C. § 102 has been overcome. Accordingly, withdrawal of the rejection under 35 U.S.C. § 102 is respectfully requested.

Having overcome all outstanding grounds of rejection, the application is now in condition for allowance, and prompt action toward that end is respectfully solicited.

Respectfully submitted,

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